



## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification 7 :  C12N 15/12, C07K 14/47, 16/18, A61K 38/16, C12N 15/11, C12Q 1/68, C12N 15/62, G01N 33/566		A3	(11) International Publication Number: <b>WO 00/06730</b>  (43) International Publication Date: 10 February 2000 (10.02.00)																					
<p>(21) International Application Number: <b>PCT/US99/17167</b></p> <p>(22) International Filing Date: 30 July 1999 (30.07.99)</p> <p>(30) Priority Data:</p> <table> <tr> <td>60/155,185</td> <td>31 July 1998 (31.07.98)</td> <td>US</td> </tr> <tr> <td>60/160,081</td> <td>4 August 1998 (04.08.98)</td> <td>US</td> </tr> <tr> <td>60/155,228</td> <td>19 August 1998 (19.08.98)</td> <td>US</td> </tr> </table> <p>(63) Related by Continuation (CON) or Continuation-in-Part (CIP) to Earlier Applications</p> <table> <tr> <td>US</td> <td>60/155,185 (CIP)</td> </tr> <tr> <td>Filed on</td> <td>31 July 1998 (31.07.98)</td> </tr> <tr> <td>US</td> <td>60/160,081 (CIP)</td> </tr> <tr> <td>Filed on</td> <td>4 August 1998 (04.08.98)</td> </tr> <tr> <td>US</td> <td>60/155,228 (CIP)</td> </tr> <tr> <td>Filed on</td> <td>19 August 1998 (19.08.98)</td> </tr> </table> <p>(71) Applicant (for all designated States except US): INCYTE PHARMACEUTICALS, INC. [US/US]; 3174 Porter Drive, Palo Alto, CA 94304 (US).</p>		60/155,185	31 July 1998 (31.07.98)	US	60/160,081	4 August 1998 (04.08.98)	US	60/155,228	19 August 1998 (19.08.98)	US	US	60/155,185 (CIP)	Filed on	31 July 1998 (31.07.98)	US	60/160,081 (CIP)	Filed on	4 August 1998 (04.08.98)	US	60/155,228 (CIP)	Filed on	19 August 1998 (19.08.98)	<p>(72) Inventors; and</p> <p>(75) Inventors/Applicants (for US only): BANDMAN, Olga [US/US]; 366 Anna Avenue, Mountain View, CA 94043 (US). TANG, Y., Tom [US/US]; 4230 Ranwick Court, San Jose, CA 95118 (US). YUE, Henry [US/US]; 826 Lois Avenue, Sunnyvale, CA 94087 (US). CORLEY, Neil, C. [US/US]; 1240 Dale Avenue #30, Mountain View, CA 94040 (US). GUEGLER, Karl, J. [US/US]; 1048 Oakland Road, Menlo Park, CA 94025 (US). AZIMZAI, Yalda [US/US]; 2045 Rock Springs Drive, Hayward, CA 94545 (US). PATTERSON, Chandra [US/US]; 490 Sherwood Way #1, Menlo Park, CA 94025 (US). LAL, Preeti [US/US]; 2382 Lass Drive, Santa Clara, CA 95054 (US). BAUGHN, Mariah, R. [US/US]; 14244 Santiago Road, San Leandro, CA 94577 (US).</p> <p>(74) Agents: BILLINGS, Lucy, J. et al.; Incyte Pharmaceuticals, Inc., 3174 Porter Drive, Palo Alto, CA 94304 (US).</p> <p>(81) Designated States: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).</p> <p><b>Published</b> With international search report.</p> <p>(88) Date of publication of the international search report: 4 May 2000 (04.05.00)</p>	
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(54) Title: HUMAN CYTOSKELETAL PROTEINS

## (57) Abstract

The invention provides human cytoskeletal proteins (HCYT) and polynucleotides which identify and encode HCYT. The invention also provides expression vectors, host cells, antibodies, agonists, and antagonists. The invention also provides methods for diagnosing, treating or preventing disorders associated with expression of HCYT.

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# INTERNATIONAL SEARCH REPORT

International Application No  
PCT/US 99/17167

## A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 C12N15/12 C07K14/47 C07K16/18 A61K38/16 C12N15/11  
C12Q1/68 C12N15/62 G01N33/566

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 C07K C12N A61K C12Q G01N

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	R-P. RYSECK ET AL.: "Coordinate induction of fibronectin, fibronectin receptor, tropomyosin and actin genes in serum-stimulated fibroblasts." EXPERIMENTAL CELL RESEARCH, vol. 180, 1989, pages 537-545, XP002122319 the whole document	4-6
Y	---	1-3, 7-16,19, 20
X	A.R. MACLEOD ET AL.: "Characterization of a cDNA defining a gene family encoding TM30pl, a human fibroblast tropomyosin." J. MOL. BIOL., vol. 194, 1987, pages 1-10, XP000853810 the whole document --- -/-	10,11

Further documents are listed in the continuation of box C.

Patent family members are listed in annex.

### \* Special categories of cited documents :

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier document but published on or after the international filing date
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"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

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Date of the actual completion of the international search

Date of mailing of the international search report

18 November 1999

01.03.00

Name and mailing address of the ISA

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Authorized officer

Hix, R

## INTERNATIONAL SEARCH REPORT

National Application No  
PCT/US 99/17167

## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	Y-C. WANG ET AL.: "Splicing of two alternative exon pairs in beta-tropomyosin pre-mRNA is independently controlled during myogenesis." THE JOURNAL OF BIOLOGICAL CHEMISTRY, vol. 267, no. 17, 15 June 1992 (1992-06-15), pages 12004-12010, XP002122321 the whole document	4-6
Y	---	1-3, 7-16,19, 20
X	M. LEMONNIER ET AL.: "The chicken gene encoding the alpha isoform of tropomyosin of fast-twitch muscle fibers: organization, expression and identification of the major proteins synthesized." GENE, vol. 107, 1991, pages 229-240, XP002122322 the whole document	4-6
Y	---	1-3, 7-16,19, 20
X	S.H. PEARSON ET AL.: "A novel hybrid alpha-tropomyosin in fibroblasts is produced by alternative splicing of transcripts from the skeletal muscle alpha-tropomyosin gene." THE JOURNAL OF BIOLOGICAL CHEMISTRY, vol. 262, no. 33, 25 November 1987 (1987-11-25), pages 15998-16010, XP002122323 the whole document	4-6
Y	---	1-3, 7-16,19, 20
X	P.L. HALLAUSER ET AL.: "Closely related alpha-tropomyosin in mRNAs in quail fibroblasts and skeletal muscle cells" THE JOURNAL OF BIOLOGICAL CHEMISTRY, vol. 262, no. 8, 15 March 1987 (1987-03-15), pages 3590-3596, XP002122324 the whole document	4-6
Y	---	1-3, 7-16,19, 20
		-/-

## INTERNATIONAL SEARCH REPORT

International Application No  
PCT/US 99/17167

## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	HARDY S ET AL: "The <i>Xenopus laevis</i> TM-4 gene encodes non-muscle and cardiac tropomyosin isoforms through alternative splicing" GENE, NL, ELSEVIER BIOMEDICAL PRESS. AMSTERDAM, vol. 156, no. 2, page 265-270 XP004042365 ISSN: 0378-1119 the whole document	4-6
Y	---	1-3, 7-16, 19, 20
X	L.O. GOODWIN ET AL.: "Four fibroblast tropomyosin isoforms are expressed from the rat alpha-tropomyosin gene via alternative RNA splicing and the use of two promoters." THE JOURNAL OF BIOLOGICAL CHEMISTRY, vol. 266, 5 May 1991 (1991-05-05), pages 8408-8415, XP002122325 the whole document	4-6
X	K. TAKENAGA ET AL.: "Isolation and characterization of a cDNA that encodes mouse fibroblast tropomyosin isoform 2." MOLECULAR AND CELLULAR BIOLOGY, vol. 8, no. 11, November 1988 (1988-11), pages 5561-5565, XP002122326 the whole document	4-6
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# INTERNATIONAL SEARCH REPORT

national application No.

PCT/US 99/ 17167

## Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1.  Claims Nos.: because they relate to subject matter not required to be searched by this Authority, namely:

**Remark:** Although claims 19 and 20 are directed to a method of treatment of the human/animal body, the search has been carried out and based on the alleged effects of the compound/composition.

2.  Claims Nos.: because they relate to parts of the international Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:

See FURTHER INFORMATION Sheet PCT/ISA/210

3.  Claims Nos.: because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

## Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1.  As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2.  As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3.  As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4.  No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Claims 1-20 (partially)

Remark on Protest

The additional search fees were accompanied by the applicant's protest

No protest accompanied the payment of additional search fees.

3  
Form PCT/IS

**FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210**

Continuation of Box I.2

Claims Nos.: 17 and 18

The agonist and antagonist of claims 17 and 18, respectively, are insufficiently characterized, consequently a complete and meaningful search is not possible.

The applicant's attention is drawn to the fact that claims, or parts of claims, relating to inventions in respect of which no international search report has been established need not be the subject of an international preliminary examination (Rule 66.1(e) PCT). The applicant is advised that the EPO policy when acting as an International Preliminary Examining Authority is normally not to carry out a preliminary examination on matter which has not been searched. This is the case irrespective of whether or not the claims are amended following receipt of the search report or during any Chapter II procedure.

**FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210**

**1. Claims: 1-20 partially**

A substantially purified polypeptide comprising an amino acid sequence consisting of SEQ ID NO: 1, the polynucleotide which hybridizes under stringent conditions thereto and splice variant thereof consisting of SEQ ID NO: 9 and 10, method for detecting polynucleotides which hybridize thereto, expression vectors comprising said polynucleotide and host cell comprising said vector, pharmaceutical composition comprising said polypeptide, antibody which binds to said polypeptide and use of said polypeptide in methods of treatment.

**2. Claims: 1-20 partially**

idem for SEQ ID NO: 3 and 11

**3. Claims: 1-20 partially**

idem for SEQ ID NO: 4 and 12

**4. Claims: 1-20 partially**

idem for SEQ ID NO: 5 and 13

**5. Claims: 1-20 partially**

idem for SEQ ID NO: 6 and 14

**6. Claims: 1-20 partially**

idem for SEQ ID NO: 7 and 15

**7. Claims: 1-20 partially**

idem for SEQ ID NO: 8 and 16